

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

Please amend the claims as follows:

1. (Original) Surface-modified zinc oxides, characterized in that they have the following physico-chemical characteristic data:

BET surface areas:  $18 \pm 5 \text{ m}^2/\text{g}$

C content: 0.5 to 1.0 wt. %

2. (Original) Surface-modified zinc oxide according to Claim 1, which has been surface modified with a member selected from the group consisting of:

a) Organosilanes of the type  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$

R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
 $n = 1 - 20$

b) Organosilanes of the type  $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n-1})$

R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = cycloalkyl  
 $n = 1 - 20$   
 $x + y = 3$   
 $x = 1, 2$   
 $y = 1, 2$

c) Halogeno-organosilanes of the type  $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n-1})$

X = Cl, Br  
 $n = 1 - 20$

d) Halogeno-organosilanes of the type  $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n-1})$

X = Cl, Br  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

R'=cycloalkyl  
 n = 1 – 20

e) Halogeno-organosilanes of the type

$X(R')_2Si(C_nH_{2n+1})$  and  $X(R')_2Si(C_nH_{2n-1})$   
 X = Cl, Br  
 R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-,  
 i-propyl-, butyl-  
 R'=cycloalkyl  
 n = 1 – 20

f) Organosilanes of the type  $(RO)_3Si(CH_2)_m-R'$

R = alkyl, such as methyl-, ethyl-, propyl-  
 m = 0,1 - 20  
 R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted phenyl radicals)  
 -C<sub>4</sub>F<sub>9</sub>, OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
 -NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,  
 -N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
 -OOC(CH<sub>3</sub>)C = CH<sub>2</sub>  
 -OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
 -NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
 -NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -S<sub>x</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -SH  
 -NR'R''R''' (R' = alkyl, aryl; R'' = H,  
 alkyl, aryl; R''' = H, alkyl, aryl, benzyl,  
 C<sub>2</sub>H<sub>4</sub>NR'''' R'''' where R'''' = H, alkyl and  
 R'''' = H, alkyl)

g) Organosilanes of the type  $(R'')_x(RO)_ySi(CH_2)_m-R'$

R'' = alkyl      x+y = 2  
                  = cycloalkyl      x = 1,2  
 y = 1,2  
 m = 0,1 to 20  
 R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted phenyl radicals)  
 -C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
 -NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,  
 -N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
 -OOC(CH<sub>3</sub>)C = CH<sub>2</sub>

-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
 -NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
 -NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -S<sub>X</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -SH  
 -NR'R''R''' (R' = alkyl, aryl; R'' = H, alkyl, aryl; R''' = H, alkyl, aryl,  
 benzyl,  
 C<sub>2</sub>H<sub>4</sub>NR'''' R'''' where R'''' = H, alkyl  
 and R'''' = H, alkyl)

h) Halogeno-organosilanes of the type X<sub>3</sub>Si(CH<sub>2</sub>)<sub>m</sub>-R'

X = Cl, Br

m = 0, 1 - 20

R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted  
 phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>

-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>,

-NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>

-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>

-OOC(CH<sub>3</sub>)C = CH<sub>2</sub>

-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>

-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>

-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>

-S<sub>X</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>

-SH

i) Halogeno-organosilanes of the type (R)X<sub>2</sub>Si(CH<sub>2</sub>)<sub>m</sub>-R'

X = Cl, Br

R = alkyl, such as methyl-, ethyl-, propyl-

m = 0, 1 - 20

R' = methyl-, aryl (e.g. -C<sub>6</sub>H<sub>5</sub>, substituted  
 phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>

-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,

-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>

-OOC(CH<sub>3</sub>)C = CH<sub>2</sub>

-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>

-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>

-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>,

wherein R can be methyl-, ethyl-, propyl-, butyl-  
 $-S_X-(CH_2)_3Si(OR)_3$ , wherein R can be methyl-,  
 ethyl-, propyl-, butyl-  
 $-SH$

j) Halogeno-organosilanes of the type  $(R)_2X Si(CH_2)_m-R'$

$X = Cl, Br$

$R = \text{alkyl}$

$m = 0, 1 - 20$

$R' = \text{methyl-, aryl (e.g. } -C_6H_5, \text{ substituted phenyl radicals)}$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2$

$-NH_2, -N_3, -SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2$

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3, -NH-COO-CH_2-CH_3, -NH-$

$(CH_2)_3Si(OR)_3$

$-S_X-(CH_2)_3Si(OR)_3$

$-SH$

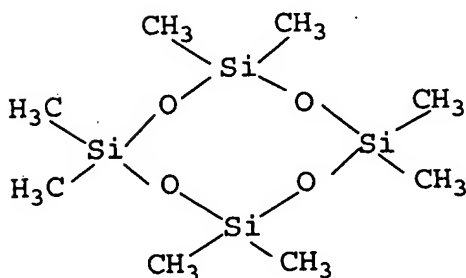
k) Silazanes of the type  $R'R_2Si-N-SiR_2R'$



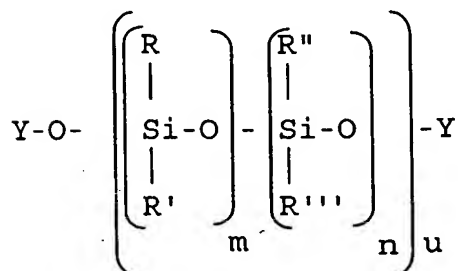
$R = \text{alkyl, vinyl, aryl}$

$R' = \text{alkyl, vinyl, aryl}$

l) Cyclic polysiloxanes of the type D 3, D 4, D 5, wherein D 3, D 4 and D 5 are understood as cyclic polysiloxanes with 3, 4 or 5 units of the type  $-O-Si(CH_3)_2-$ . E.g. octamethylcyclotetrasiloxane = D 4



m) Polysiloxanes or silicone oils of the type



$$m = 0, 1, 2, 3, \dots \infty$$

$$n = 0, 1, 2, 3, \dots \infty$$

$$u = 0, 1, 2, 3, \dots \infty$$

$$Y=CH_3, H, C_nH_{2n+1} \quad n=1-20$$

$$Y=Si(CH_3)_3, Si(CH_3)_2H$$

$$Si(CH_3)_2OH, Si(CH_3)_2(OCH_3),$$

$$Si(CH_3)_2(C_nH_{2n+1}) \quad n=1-20$$

R = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl,  
 such as phenyl und substituted phenyl radicals,  
 $(CH_2)_n-NH_2$ , H

R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl,  
 such as phenyl- and substituted phenyl radicals,  
 $(CH_2)_n-NH_2$ , H

R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl,  
 such as phenyl- and substituted phenyl radicals,  
 $(CH_2)_n-NH_2$ , H

R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl,  
 such as phenyl und substituted phenyl radicals,  
 $(CH_2)_n-NH_2$ , H

3. (Original) A process for the preparation of the surface-modified zinc oxide according to Claim 1, comprising optionally spraying a zinc oxide with water, spraying a surface-modifying agent at room temperature to obtain a zinc oxide sprayed with said surface-modifying agent, heat treating said zinc oxide at a temperature of  $50$  to  $400^\circ C$  over a period of  $1$  to  $6$  hours to thereby obtain a surface-modified zinc oxide.

4. (Original) The process according to Claim 3, wherein the surface-modifying agent is a member selected from the group consisting of:

- a) Organosilanes of the type  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$   
R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
n = 1 – 20
- b) Organosilanes of the type  $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n-1})$   
R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = cycloalkyl  
n = 1 - 20  
x + y = 3  
x = 1, 2  
y = 1, 2
- c) Halogeno-organosilanes of the type  $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n-1})$   
X = Cl, Br  
n = 1 – 20
- d) Halogeno-organosilanes of the type  $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n-1})$   
1)  
X = Cl, Br  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = cycloalkyl  
n = 1 – 20
- e) Halogeno-organosilanes of the type  
 $\text{X}(\text{R}')_2\text{Si}(\text{C}_n\text{H}_{2n+1})$  and  $\text{X}(\text{R}')_2\text{Si}(\text{C}_n\text{H}_{2n-1})$   
X = Cl, Br  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = cycloalkyl  
n = 1 – 20
- f) Organosilanes of the type  $(\text{RO})_3\text{Si}(\text{CH}_2)_m\text{-R}'$   
R = alkyl, such as methyl-, ethyl-, propyl-  
m = 0, 1 - 20  
R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted phenyl radicals)  
-C<sub>4</sub>F<sub>9</sub>, OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>

-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,  
 -N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
 -OOC(CH<sub>3</sub>)C = CH<sub>2</sub>  
 -OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
 -NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
 -NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-  
 (CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -S<sub>x</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -SH  
 -NR'R''R''' (R' = alkyl, aryl; R'' = H,  
 alkyl, aryl; R''' = H, alkyl, aryl, benzyl, C<sub>2</sub>H<sub>4</sub>NR'''' R'''' where R''''  
 = H, alkyl and R'''' = H, alkyl)

g) Organosilanes of the type (R'')<sub>x</sub>(RO)<sub>y</sub>Si(CH<sub>2</sub>)<sub>m</sub>-R'

R'' = alkyl      x+y      = 2  
                  = cycloalkyl    x      = 1,2  
 y = 1,2  
 m = 0,1 to 20  
 R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
 -NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,  
 -N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
 -OOC(CH<sub>3</sub>)C = CH<sub>2</sub>  
 -OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
 -NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
 -NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-  
 (CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -S<sub>x</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -SH  
 -NR'R''R''' (R' = alkyl, aryl; R'' = H, alkyl, aryl; R''' = H, alkyl, aryl,  
 benzyl,  
 C<sub>2</sub>H<sub>4</sub>NR'''' R'''' where R'''' = H, alkyl and R'''' = H, alkyl)

h) Halogeno-organosilanes of the type X<sub>3</sub>Si(CH<sub>2</sub>)<sub>m</sub>-R'

X = Cl, Br  
 m = 0,1 - 20  
 R' = methyl-, aryl (for example -C<sub>6</sub>H<sub>5</sub>, substituted phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>,  
-NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>  
-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
-OOC(CH<sub>3</sub>)C = CH<sub>2</sub>  
-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
-S<sub>X</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
-SH

i) Halogeno-organosilanes of the type (R)X<sub>2</sub>Si(CH<sub>2</sub>)<sub>m</sub>-R'

X = Cl, Br

R = alkyl, such as methyl-, ethyl-, propyl-

m = 0, 1 - 20

R' = methyl-, aryl (e.g. -C<sub>6</sub>H<sub>5</sub>, substituted  
phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,  
-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
-OOC(CH<sub>3</sub>)C = CH<sub>2</sub>  
-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>,  
wherein R can be methyl-, ethyl-, propyl-, butyl-  
-S<sub>X</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>, wherein R can be methyl-,  
ethyl-, propyl-, butyl-  
-SH

j) Halogeno-organosilanes of the type (R)<sub>2</sub>X Si(CH<sub>2</sub>)<sub>m</sub>-R'

X = Cl, Br

R = alkyl

m = 0, 1 - 20

R' = methyl-, aryl (e.g. -C<sub>6</sub>H<sub>5</sub>, substituted  
phenyl radicals)

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>  
-NH<sub>2</sub>, -N<sub>3</sub>, -SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>  
-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>  
-OOC(CH<sub>3</sub>)C = CH<sub>2</sub>



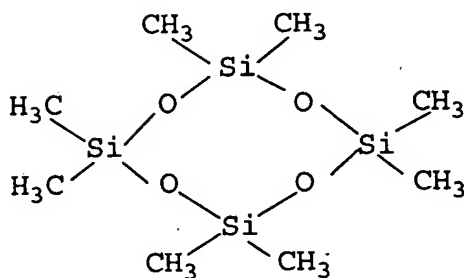
-OCH<sub>2</sub>-CH(O)CH<sub>2</sub>  
 -NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>  
 -NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-  
 (CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -S<sub>X</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>  
 -SH

k) Silazanes of the type R'R<sub>2</sub>Si-N-SiR<sub>2</sub>R'

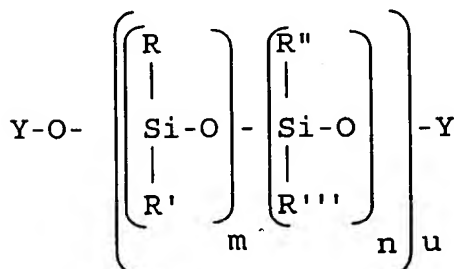


R = alkyl, vinyl, aryl  
 R' = alkyl, vinyl, aryl

l) Cyclic polysiloxanes of the type D 3, D 4, D 5, wherein D 3, D 4 and D 5 are understood as cyclic polysiloxanes with 3, 4 or 5 units of the type -O-Si(CH<sub>3</sub>)<sub>2</sub>-.E.g. octamethylcyclotetrasiloxane = D 4



m) Polysiloxanes or silicone oils of the type



$$m = 0, 1, 2, 3, \dots \infty$$

$$n = 0, 1, 2, 3, \dots \infty$$

$$u = 0, 1, 2, 3, \dots \infty$$

$$\text{Y} = \text{CH}_3, \text{H}, \text{C}_n\text{H}_{2n+1} \quad n=1-20$$

$$\text{Y} = \text{Si}(\text{CH}_3)_3, \text{Si}(\text{CH}_3)_2\text{H}$$

$$\text{Si}(\text{CH}_3)_2\text{OH}, \text{Si}(\text{CH}_3)_2(\text{OCH}_3),$$

$$\text{Si}(\text{CH}_3)_2(\text{C}_n\text{H}_{2n+1}) \quad n=1-20$$

- R = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl, such as phenyl and substituted phenyl radicals,  $(CH_2)_n-NH_2$ , H
- R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl, such as phenyl- and substituted phenyl radicals,  $(CH_2)_n-NH_2$ , H
- R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl, such as phenyl- and substituted phenyl radicals,  $(CH_2)_n-NH_2$ , H
- R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to  $20$ , aryl, such as phenyl and substituted phenyl radicals,  $(CH_2)_n-NH_2$ , H

5. (Original) A process for the preparation of the surface-modified zinc oxides according to Claim 1, comprising optionally spraying zinc oxide with water, treating said zinc oxide with a surface-modifying agent in vapour form and then heat-treating the resulting zinc oxide at a temperature of  $50$  to  $800^\circ\text{C}$  over a period of  $0.5$  to  $6$  hours to thereby obtain a surface-modified zinc oxide.

6. (Original) The process according to Claim 5, wherein the surface-modifying agent is a member selected from the group consisting of:

a) Organosilanes of the type  $(RO)_3Si(C_nH_{2n+1})$  and  $(RO)_3Si(C_nH_{2n-1})$

R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
 $n = 1 - 20$

b) Organosilanes of the type  $R'_x(RO)_ySi(C_nH_{2n+1})$  and  $R'_x(RO)_ySi(C_nH_{2n-1})$

R = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R' = alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-  
R'=cycloalkyl  
 $n = 1 - 20$   
 $x+y = 3$   
 $x = 1,2$   
 $y = 1,2$

c) Halogeno-organosilanes of the type  $X_3Si(C_nH_{2n+1})$  and  $X_3Si(C_nH_{2n-1})$

$X = Cl, Br$

$n = 1 - 20$

d) Halogeno-organosilanes of the type  $X_2(R')Si(C_nH_{2n+1})$  and  $X_2(R')Si(C_nH_{2n-1})$

1)

$X = Cl, Br$

$R' =$  alkyl, such as, for example, methyl-, ethyl-,

n-propyl-, i-propyl-, butyl-

$R' =$  cycloalkyl

$n = 1 - 20$

e) Halogeno-organosilanes of the type

$X(R')_2Si(C_nH_{2n+1})$  and  $X(R')_2Si(C_nH_{2n-1})$

$X = Cl, Br$

$R' =$  alkyl, such as, for example, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

$R' =$  cycloalkyl

$n = 1 - 20$

f) Organosilanes of the type  $(RO)_3Si(CH_2)_m-R'$

$R =$  alkyl, such as methyl-, ethyl-, propyl-

$m = 0, 1 - 20$

$R' =$  methyl-, aryl (for example  $-C_6H_5$ ,

substituted phenyl radicals)

$-C_4F_9$ ,  $OCF_2-CHF-CF_3$ ,  $-C_6F_{13}$ ,  $-O-CF_2-CHF_2$

$-NH_2$ ,  $-N_3$ ,  $-SCN$ ,  $-CH=CH_2$ ,  $-NH-CH_2-CH_2-NH_2$ ,

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3$ ,  $-NH-COO-CH_2-CH_3$ ,  $-NH-$

$(CH_2)_3Si(OR)_3$

$-S_x-(CH_2)_3Si(OR)_3$

$-SH$

$-NR'R''R'''$  ( $R' =$  alkyl, aryl;  $R'' = H$ ,

alkyl, aryl;  $R''' = H$ , alkyl, aryl, benzyl,  $C_2H_4NR''''$   $R''''$  where  $R'''' = H$ , alkyl

and  $R'''' = H$ , alkyl)

g) Organosilanes of the type  $(R'')_x(RO)_ySi(CH_2)_m-R'$

$R'' = \text{alkyl} \quad x+y=2$   
 $= \text{cycloalkyl} \quad x = 1,2$

$y = 1,2$

$m = 0,1 \text{ to } 20$

$R' = \text{methyl-}, \text{aryl (for example } -C_6H_5, \text{ substituted phenyl radicals)}$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2$

$-NH_2, -N_3, -SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2,$

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3, -NH-COO-CH_2-CH_3, -NH-$

$(CH_2)_3Si(OR)_3$

$-S_x-(CH_2)_3Si(OR)_3$

$-SH$

$-NR'R''R'''$  ( $R' = \text{alkyl, aryl}; R'' = H, \text{ alkyl, aryl}; R''' = H, \text{ alkyl, aryl, benzyl,}$

$C_2H_4NR''''R'''''$  where  $R'''' = H, \text{ alkyl}$  and  $R'''' = H, \text{ alkyl}$ )

h) Halogeno-organosilanes of the type  $X_3Si(CH_2)_m-R'$

$X = Cl, Br$

$m = 0,1 - 20$

$R' = \text{methyl-}, \text{aryl (for example } -C_6H_5, \text{ substituted phenyl radicals)}$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2$

$-NH_2, -N_3, -SCN, -CH=CH_2,$

$-NH-CH_2-CH_2-NH_2$

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3, -NH-COO-CH_2-CH_3, -NH- (CH_2)_3Si(OR)_3$

$-S_x-(CH_2)_3Si(OR)_3$

$-SH$

i) Halogeno-organosilanes of the type  $(R)X_2Si(CH_2)_m-R'$

X = Cl, Br

R = alkyl, such as methyl-, ethyl-, propyl-

m = 0, 1 - 20

R' = methyl-, aryl (e.g.  $-C_6H_5$ , substituted phenyl radicals)

$-C_4F_9$ ,  $-OCF_2-CHF-CF_3$ ,  $-C_6F_{13}$ ,  $-O-CF_2-CHF_2$

$-NH_2$ ,  $-N_3$ ,  $-SCN$ ,  $-CH=CH_2$ ,  $-NH-CH_2-CH_2-NH_2$ ,

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3$ ,  $-NH-COO-CH_2-CH_3$ ,  $-NH-(CH_2)_3Si(OR)_3$ ,

wherein R can be methyl-, ethyl-, propyl-, butyl-

$-S_X-(CH_2)_3Si(OR)_3$ , wherein R can be methyl-,

ethyl-, propyl-, butyl-

$-SH$

j) Halogeno-organosilanes of the type  $(R)_2X Si(CH_2)_m-R'$

X = Cl, Br

R = alkyl

m = 0, 1 - 20

R' = methyl-, aryl (e.g.  $-C_6H_5$ , substituted

phenyl radicals)

$-C_4F_9$ ,  $-OCF_2-CHF-CF_3$ ,  $-C_6F_{13}$ ,  $-O-CF_2-CHF_2$

$-NH_2$ ,  $-N_3$ ,  $-SCN$ ,  $-CH=CH_2$ ,  $-NH-CH_2-CH_2-NH_2$

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3$ ,  $-NH-COO-CH_2-CH_3$ ,  $-NH-$

$(CH_2)_3Si(OR)_3$

$-S_X-(CH_2)_3Si(OR)_3$

$-SH$

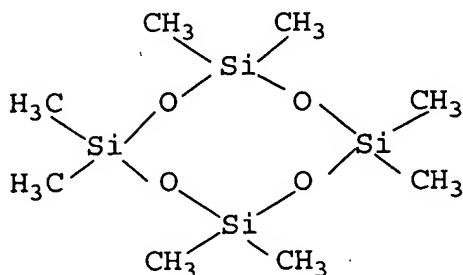
k) Silazanes of the type  $R'R_2Si-N-SiR_2R'$



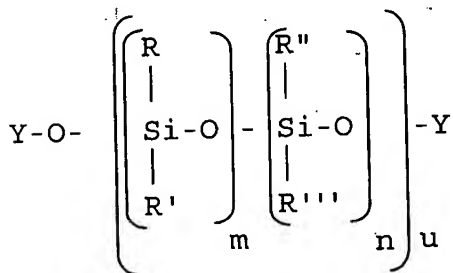
R = alkyl, vinyl, aryl

R' = alkyl, vinyl, aryl

l) Cyclic polysiloxanes of the type D 3, D 4, D 5, wherein D 3, D 4 and D 5 are understood as cyclic polysiloxanes with 3, 4 or 5 units of the type -O-Si(CH<sub>3</sub>)<sub>2</sub>-. E.g. octamethylcyclotetrasiloxane = D 4



m) Polysiloxanes or silicone oils of the type



$$m = 0, 1, 2, 3, \dots \infty$$

$$n = 0, 1, 2, 3, \dots \infty$$

$$u = 0, 1, 2, 3, \dots \infty$$

$$Y=CH_3, H, C_nH_{2n+1} \quad n=1-20$$

$$Y=Si(CH_3)_3, Si(CH_3)_2H$$

$$Si(CH_3)_2OH, Si(CH_3)_2(OCH_3),$$

$$Si(CH_3)_2(C_nH_{2n+1}) \quad n=1-20$$

R = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to 20, aryl,

such as phenyl und substituted phenyl radicals,

$(CH_2)_n-NH_2, H$

R' = alkyl, such as  $C_nH_{2n+1}$ , wherein  $n = 1$  to 20, aryl,

such as phenyl- and substituted phenyl radicals,

$(\text{CH}_2)_n\text{-NH}_2$ , H

R' = alkyl, such as  $\text{C}_n\text{H}_{2n+1}$ , wherein  $n = 1$  to 20, aryl,  
such as phenyl- and substituted phenyl radicals,  
 $(\text{CH}_2)_n\text{-NH}_2$ , H

R' = alkyl, such as  $\text{C}_n\text{H}_{2n+1}$ , wherein  $n = 1$  to 20, aryl,  
such as phenyl und substituted phenyl radicals,  
 $(\text{CH}_2)_n\text{-NH}_2$ , H

7. (Original) A cosmetic preparation comprising a dermatologically acceptable carrier and the surface-modified zinc oxide of Claim 1.

8. (Original) A cosmetic preparation comprising a dermatologically acceptable carrier and the surface-modified zinc oxide of Claim 2.

9. (Original) A sunscreen preparation comprising a dermatologically acceptable carrier and the surface modified zinc oxide of Claim 1.

10. (Original) A sunscreen preparation comprising a dermatologically acceptable carrier and the surface modified zinc oxide of Claim 2.

11. (Original) The sunscreen preparation according to Claim 9, wherein the dermatologically acceptable carrier is a member selected from the group consisting of octocrylene, ethylhexyl methoxycinnamate, phenylbenzimidazole sulfoinc acid, and bis-ethylhexyloxy methoxyphenyl triazine.

12. (New) The surface-modified zinc oxide according to Claim 1 made from a zinc oxide which is a pyrogenically produced zinc oxide powder having a BET surface area of 10 to 100  $\text{m}^2/\text{g}$  in the form of aggregates of anisotropic primary particles wherein the aggregates have an average diameter of 50 to 300 nm.

13. (New) The surface-modified zinc oxide according to Claim 12 wherein the aggregates have a shape factor F (circle) of below 0.5.

14. (New) The surface-modified zinc oxide according to Claim 12 wherein the zinc oxide powder displays at its surface an oxygen concentration as non-desorbable moisture in the form of Zn-OH and/or Zn-OH<sub>2</sub> units of at least 40%.